

5/17/2018

Print



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	
PO039875	TWM001-VU	1	1	Net 30	M2024T3T1.000W.665	2024T3 Tubing 1" OD x 0.65" Thick receive ft				200	5/23/2018	204		S072325	Stock	5/17/2018	\$ 7.50 / ft		
		2			M304TR0.750W.049	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				80		80		S072326	Stock	5/17/2018	\$ 2.58 / ft		
		3			M6061T6T0.625W.125	6061-T6 Round Tube 0.625 X.125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-730/8 OR QQ-A-200/8 OR QQ-A-225/6 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft						84		S072327	Stock	5/17/2018	\$ 5.15 / ft		
		4			M6061T6T2.00W0.125	6061T6 Round Tube 2.00 X.125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-730/8 OR QQ-A-200/8 OR QQ-A-225/6 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				12		12		S072328	Stock	5/17/2018	\$ 8.46 / ft		
Total:										372		380							

Plex 5/17/2018 1:03 PM Dart.Dubois.Pascal



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO039875

Supplier: TWM001-VU
TW Metals
PO Box 933014
Atlanta, GA 31193-3014 USA
Phone: 585 768 5600
Fax: 585 768 5601

PO No: PO039875

PO Date: 5/11/18

Due Date: 5/23/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
MAY 11 2018

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M2024T3T1.000W.065		2024T3 Tubing 1" OD x 0.65" Thick receive ft	Firmed	5/23/18	200 ft	0 ft	200 ft	\$7.50/ft	\$1,500.00
Line Item Note AS PER MATERIAL 2024-T3 ROUND TUBING, MAT'L SPEC'S AMS-QQ-A-250/4										
2	M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	5/23/18	80 pcs	0 pcs	80 pcs	\$2.579/pcs	\$206.32
3	M6061T6T0.625W.125		6061-T6 Round Tube 0.625 X .125W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	5/23/18	80 pcs	0 pcs	80 pcs	\$5.15/pcs	\$412.00

DAS
11
9-89

DAS
11
9-89

DAS
11
9-89

5/11/2018

PURCHASE ORDER

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4	M6061T6T2.00W0.125		6061T6 Round Tube 2.00 X.125W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	5/23/18	12 pcs	0 pcs 12 ¹	12 pcs	\$8.4606/pcs	\$101.53
Grand Total:										\$2,219.85

DAS
11
9-89

MAY 17 2018

Order Notes

Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 dart notification by supplier
- A043 retention of quality documents
- A048 counterfeit parts avoidance, detection, mitigation and disposition program
- A049 supplier awareness

CL



Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 5/11/18 10:35 AM dart.lavoie.chantal



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80932776 FROM: CHIC PAGE 1

CUST NUMBER: 1203820 NET WGT: 105.830 REQ.DATE: 05/23/18 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 05/14/18
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO039875 RELEASE NO.:
RECEIVING PHONE:

LINE	ITEM	DESCRIPTION	WIDTH	LENGTH
0001	43260	D2024-T3 1 OD X .065 WA		12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	200.000 FT	204.000 FT	204.000 FT	46.708	17

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49368273 HT:F002414570001 PC: 17 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:223073

LINE	ITEM	DESCRIPTION	WIDTH	LENGTH
0002	36860	SMLS CD 304/L A269 3/4 OD X .049 WA		20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	80.000 FT	80.000 FT	80.000 FT	29.338	4

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO:49370276 HT:N170711AS10 PC: 4 CUSTOMER QTY: UOM
MLT:CHINA MFG:CHINA SLB/CL:-

LINE	ITEM	DESCRIPTION	WIDTH	LENGTH
0003	42588	D6061-T6 5/8 OD X .125 WA		12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	80.000 FT	84.000 FT	84.000 FT	19.394	7

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49382075 HT:F002592610001 PC: 7 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:225004

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80932776

FROM: CHIC

PAGE 2

CUST NUMBER: 1203820 NET WGT: 105.830 REQ.DATE: 05/23/18 CONFIRMED
 SOLD TO: SHIP TO:
 DART AEROSPACE LTD DART AEROSPACE LTD
 1270 ABERDEEN ST 1270 ABERDEEN ST
 HAWKESBURY ON HAWKESBURY ON
 CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 05/14/18
 TERMS: NET 30 DAYS VIA: COMMON CARRIER
 F.O.B.: SHIPPING POINT FREIGHT: PREPAID
 CUST ORD NO.: PO039875 RELEASE NO.:
 RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
 0004 44622 D6061-T6 2 OD X .125 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	12.000 FT	12.000 FT	12.000 FT	10.390	1

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
 PO:49372288 HT:1403429 PC: 1 CUSTOMER QTY: UOM
 MLT:GERMANY MFG:GERMANY SLB/CL:65719

BROKERS KUEHNE AND NAGEL LTD

AREA		TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
YRC	REDDICRATE		1.000	74.000	7.0000	150.0000	9
YRC	CARTON		1.000	40.000	4.0000	246.0000	4
			2.000	114.000			

BY: KB
 RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED _____

DATE FILLED _____

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
 PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
 REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 80932776

FROM: CHIC

PAGE 3

CUST NUMBER: 1203820	NET WGT: 105.830	REQ.DATE: 05/23/18	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7
SALESPERSON: DONNA SMALLEY	SHIP BY: 05/14/18		
TERMS: NET 30 DAYS	235 TUBEWAY		
F.O.B.: SHIPPING POINT	CAROL STREAM	IL 60188	
CUST ORD NO.: PO039875			
VIA: COMMON CARRIER			
FREIGHT: PREPAID			
RELEASE NO.:			
RECEIVING PHONE:			

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk Kathy Bachnick Date: 5/14/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.
<http://www.twmetals.com/invoice-terms.html>

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005



Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: TW Metals (PA)
Client: 760 Constitution Drive P.O. Box 644
 19341 - 064EXTON, PA USA

Zeugnisnummer: 1675/17
Cert No. / No. du certificat:
Bestellnummer: M 49372288
Order No. / No. de commande
ALUnna Auftragsbest.-Nr: 65719/100
ALUnna Order Conf.No.:

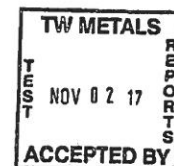
Kennzeichnung ALUnna - Cert. No.1675/17 - WW-T-700/6(F) - AMS-WW-T-700/6 (C) - AMS4082 (P) - ASTM B210 (12) - 2.000" OD X 0.125" WALL -
Marking/Marquage: 6061-T6 -CAST NO. 7144-2 - HEAT LOT NO. 1403429 - ALUNNA ORDER CONF. NO. 65719/100 - CPB 300

Lieferung pcs. lbs
Delivered Material / Matériel délivré: 77 805 **Country of Manufacture: Germany**

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
	42,0	35,0	10,0			
1	45,5	35,1	18,8			1403429
2	45,6	35,7	18,5			



Ergebnis der Prüfungen:

Es wird bestätigt, daß das Material geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht
 We confirm that the material has been tested and applies to the agreements made on receipt of the order

Test results:

Nous confirmons que le matériel a été contrôlée et correspond avec les conventions faites à la réception de la commande

Resultats:

Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2009

released by

29.09.2017

valid until 2019-11-10

TÜV Nord - Cert.- Reg. No.: 44 100 131576 and 44 117 131576

Gschwind

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Electronically Generated Certificate - Valid without signature

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M20241311000W.065

PO / BATCH NO.: 039875/5072325

DATE: MAY 17 2018

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 204'
 QUANTITY INSPECTED: 204'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.065
 THICKNESS RECEIVED: W.065
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N	AMS 4088
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	Heat # 1002414570001
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS 11</u>	SIGNED OFF BY: _____		
DATE: <u>9-89 MAY 17 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 2024-T3 SEAMLESS ALUMINUM TUBING

SPECIFICATION:

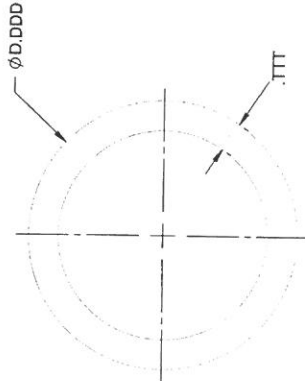
WW-T-700/3, AMS 4088
OR AMS-WW-T-700/3 OR ASTM B210

PART NUMBER:

M2024T3T D.DDD W.TTT
DIA. WALL

WHERE "D.DDD" = DIAMETER IN INCHES
& "TTT" = WALL THICKNESS IN INCHES

EG. 5/8" TUBING WITH 0.049" WALL = M2024T3T0.625W.049



RELEASED
2018 MAY 17
ECN 18-510

A	NEW ISSUE: REF. CAR18-219	DESCRIPTION	RF	BY	DATE
REV.					
DESIGN	RF				
DRAWN	RF				
CHECKED	VS				
MFG. APPR.	DD				
APPROVED	HS				
DE APPR.	CP				
DATE	18.01.16				
		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
		DRAWING NO. M2024T3T			
		TITLE 2024-T3 TUBING			
		SHEET 1 OF 1			
		SCALE NTS			
		COPYRIGHT © 2016 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.			

KAISER ALUMINUM FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49368273-1		CUSTOMER PART NUMBER: 43260		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 223073	LINE ITEM: 001	SHIP DATE: 05/26/2017	KAISER LOT NUMBER: F00241457	ALLOY: 2024	TEMPER: T3
WEIGHT SHIPPED: 769.000 LB	QUANTITY: 280.000 PCS	B/L NUMBER: 225426	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

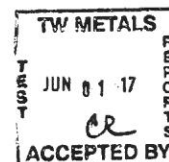
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00241457	0001	1	71.1	49.5	27.0	N/A	N/A	N/A
F00241457	0002	1	71.4	48.4	27.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.00	0.00	3.80	0.30	1.20	0.00	0.00	0.00	NA	NA	NA	0.00	0.00
D30132	.11	.17	4.66	.73	1.41	.02	.12	.03	.00	.00	.01	.01	.02

Applicable Requirements:

Description: OD: 1.0000", Wall: 0.0650", Round @
AMS4088K AMS-WW-T-700/3A ASTM B210-12
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00025082
Kaiser Order Number: 223073
Line Item: 001

KAISER
ALUMINUM
FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

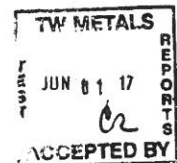
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



C

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606H6t2.00W.125
 DATE: MAY 17 2018

PO / BATCH NO.: 039875/5072328

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 12
 QUANTITY INSPECTED: 12
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.125
 THICKNESS RECEIVED: W.125
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

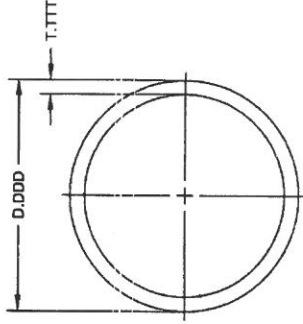
DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	AMS 4082
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	Heat # 1403429
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input type="radio"/> N <input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input type="radio"/> N <input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> DATE: <u>11 MAY 17 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



PURCHASE MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WW-T-700/6
OR QQ-A-270/6 OR QQ-A-275/6
OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

PART NUMBER:

M6061T6 | D.DDD | W.T.TTT
OD | WALL

WHERE "D.DDD" = OD IN INCHES
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2

RELEASED
2013-07-02

C	COMPLETE REFORMAT. ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. M6061T6T TITLE 6061-T6 TUBING SCALE NTS SHEET 1 OF 1 REV. C COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING.			

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005



Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: TW Metals (PA)
Client: 760 Constitution Drive P.O. Box 644
 19341 - 06-EXTON, PA USA

Zeugnisnummer: 1675/17
Cert No. / No. du certificat:
Bestellnummer: M 49372288
Order No. / No. de commande
ALUnna Auftragsbest.-Nr.: 65719/100
ALUnna Conf.-No. / conf. de commande:

Produkt: Rohre nahtlos gepresst und gezogen
Product / Produit: Tubes seamless extruded and drawn
Spezifikation: AMS - WW - T - 700/6C; AMS 4082P; ASTM B 210-12; WW-T-700/6F; -

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung

Size / Dimension

Kennzeichnung

Marking/Marquage:

2,000 INCH x 1,750 INCH x 0,125 INCH x 12,000 FEET
 44622

Zustand:

Temper/Etat

6061

T 6

ALUnna - Cert. No.1675/17 - WW-T-700/6(F) - AMS-WW-T-700/6 (C) - AMS4082 (P) - ASTM B210 (12) - 2.000" OD X 0.125" WALL - 6061-T6 -CAST NO. 7144-2 -HEAT LOT NO. 1403429 - ALUNNA ORDER CONF. NO. 65719/100 - CPB 300

Lieferung

Delivered Material / Matériel délivre:

pcs.

lbs

Country of Manufacture: Germany

77

805

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni	Na
Charge/ min.	0,40		0,15		0,8	0,04								
Cast No. max.	0,8	0,7	0,40	0,15	1,2	0,35	0,25	0,15						
7144-2/17	0,708	0,347	0,217	0,139	1,165	0,252	0,038	0,037	0,002	0,0376	0,0088	0,0012	0,0083	0,0001

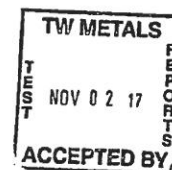
Hydrogen content: 0,17

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

Products are in accordance with applicable RoHS

FAR BAA: Cannot certify compliance
 DFARS BAA: Complies
 FAR TAA: Cannot certify compliance



Ergebnis der Prüfungen:

Es wird bestätigt, daß das Material geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht
 We confirm that the material has been tested and applies to the agreements made on receipt of the order

Test results:

Nous confirmons que le materiel a été controlée et correspond avec les conventions faites à la réception de la commande

Resultats:

Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2009
 valid until 2019-11-10

released by

29.09.2017

TÜV Nord - Cert.- Reg. No.: 44 100 131576 and 44 117 131576
 Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Gschwind

Electronically Generated Certificate - Valid without signature

AK

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061 H6T0.625W.125 PO / BATCH NO.: 039875/5072327
 DATE: MAY 17 2018

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 84'
 QUANTITY INSPECTED: 84'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.125
 THICKNESS RECEIVED: W.125
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y N	AMS 4082
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y N	Heat # PC02597610001
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>9-89 MAY 17 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/62T6510/76511 SEAMLESS TUBING

SPECIFICATION:

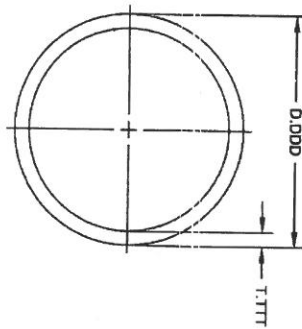
WW-T-700/8
OR QQ-A-200/8 OR QQ-A-225/8
OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

PART NUMBER:

M6061T6TDDDDWT.TTT
OD | WALL

WHERE "D.DDD" = OD IN INCHES
"T.TTT" = WALL THICKNESS

MATERIAL TOLERANCE: EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058
PER ANSI H35.2



RELEASED
2013-07-02

C	COMPLETE REFORMAT ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.	W		
DE APPR.	W		
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA REV. C SHEET 1 OF 1 SCALE NTS			

THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSE OF WHICH IT WAS ISSUED AND NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

KAISER ALUMINUM FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49382075-1		CUSTOMER PART NUMBER: 42588		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 225004	LINE ITEM: 001	SHIP DATE: 01/16/2018	KAISER LOT NUMBER: F00259261	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 638.000 LB	QUANTITY: 230.000 PCS	B/L NUMBER: 228166	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00259261	0001	1	48.8	42.7	20.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

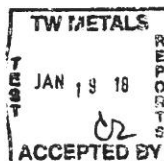
LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D30865	.63	.27	.25	.03	.99	.07	.03	.02	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).



Plant Serial: 00027154
Kaiser Order Number: 225004
Line Item: 001

a

KAISER

ALUMINUM

FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

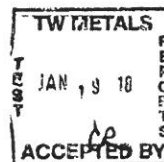
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



Plant Serial: 00027154
Kaiser Order Number: 225004
Line Item: 001



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304HVO.750W.049
 DATE: MAY 17 2018

PO / BATCH NO.: 039875/5072326

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 80
 QUANTITY INSPECTED: 80
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.049
 THICKNESS RECEIVED: W.049
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Aston A213
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # N170711 A810
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____		
DATE: <u>9-89</u> MAY 17 2018	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING
 SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL. (IN)	PERMISSIBLE WALL TOL.
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/2	±0.005	±10%
1 1/2 TO 3 1/2	±0.010	±10%
3 1/2 TO 5 1/2	±0.015	±10%
5 1/2 TO 8	±0.030	±10%

PART NUMBER:

M304TR D DDD W TTT
 OD WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES
 AND "TTT" = WALL THICKNESS IN INCHES
 EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W.065

RELEASED
 09/08/23 MJD

B		REFORMAT DWG. ADD SPECS (ZN DB-1).		CP	08.10.20
A		NEW ISSUE		DS	01.06.08
REV	DESCRIPTION	BY	DATE		
DESIGN				DART AEROSPACE LTD	
DRAWN				HAWKESBURY ONTARIO, CANADA	
CHECKED				DRAWING NO.	
MFG. APPR				M304TR	
APPROVED				TITLE	
DE APPR				304/316 ROUND TUBING	
DATE	08.10.20			REV. B	
				SHEET 1 OF 1	
				SCALE	
				NTS	

COPYRIGHT © 2001 BY DART AEROSPACE LTD
 HAWKESBURY ONTARIO, CANADA
 ALL RIGHTS RESERVED
 NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

MISCO

JIAXING MT STAINLESS STEEL CO.,LTD

MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2008 TUV SUD CERT REGISTRATION No.: 01 100 095954

PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



Precisely Right.

CERTIFICATE NO.: 17MTC-102310

SALES CONTRACT NO.: M 49370276

COMMODITY: STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION: ASTM A213-15c ASTM A269-15a, ASME SA213-15 AVG WALL

PURCHASER: KASUGAI CO., LTD.

ORDER: M 49370276

DATE OF REPORT: 2017-10-17

Steel Grade	Heat No.	Dimensions			Quantity		Process	Delivery Condition	Macroscopic Inspection	
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece			End Cut	Appearance
TP304/304L	N170711AS10	3/4	0.049	20	5500	275	Cold-Drawn	Annealed & Pickled & 320 Grit/min	Passed	Passed

Chemical Composition (W.T. %)

Element	C	Si	Mn	P	S	Cr	Ni	Mo	Ti
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-12.0	-	-
Ladle Analysis	0.017	0.34	1.32	0.027	0.001	18.13	8.01	-	-

Mechanical Properties

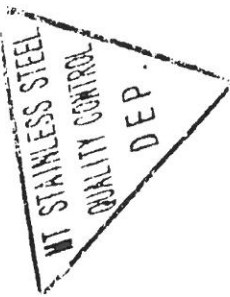
Test Item	Y.S. (MPa) Rm0.2 ≥170	T.S. (MPa) Rm ≥485	EL. (%) In2in ≥35	Reduction of Area Z (%) -	Hardness HRB ≤80	Cold Bend Test -	Flaring Test -	Flattening Test e=0.09	P.M.I. TEST -
Test Results	260	625	55	-	76	Passed	Passed	Passed	Passed

Non Destructive Tests

Test Item	Eddy Current Test
Requirements	ASTM E 426
Test Results	Passed

Remarks:

- ASTM A213-15c ASTM A269-15a, ASME SA213-15 AVG WALL
- PIPES TESTED PER ASTM A1016
- SOLUTION HEAT TREATMENT: 1050°C X 1.5m/min
- NO WELD REPAIR WAS PERFORMED
- PMI TESTING DONE ON EACH PIPE - SATISFACTORY
- IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015
- FREE FROM MERCURY CONTAMINATION
- MATERIAL IS FREE FROM RADIOACTIVITY
- VISUAL CHECK IS SATISFACTORY
- COUNTRY OF ORIGIN: CHINA
- COUNTRY OF MELT: CHINA



1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT

2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

Approved by:

